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# INTEGRATING BRIEF MINDFULNESS EXERCISES IN VIRTUAL LEARNING ENVIRONMENTS TO SUPPORT STUDENT MENTAL HEALTH AND WELLBEING

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## Abstract

Identifying the most effective means to support the mental health and wellbeing of students in higher education institutions (HEIs) is subject to ongoing international discussion and debate. Higher education presents a unique set of stressors, often at a transitional period in students' lives, and HEIs recognize the need for effective student support service provision to support students through these challenges. However, few students recognize how stress might impact their attainment, or actively seek support to prevent stress before it occurs. Not all students experiencing study-related mental health difficulties seek, or are able to access, timely support to help manage stress proactively. This may be due to a broad variety of reasons, including but not limited to: a lack of sufficient student support service provision; students' minimization of issues they are encountering; an unwillingness, or inability, to disclose mental health difficulties; a lack of insight or awareness of mental health difficulties and support services. This can contribute to students experiencing study-related burnout, avoidable distress, course drop-out, and in some cases, clinical anxiety or depression.

In the rapidly evolving landscape of higher education, the increasing popularity of online education offers potential opportunities for supporting student wellbeing in innovative ways. The use of internet-delivered, self-directed wellbeing interventions has seen a radical uptake over the past decade, and findings are overall very promising. In particular, the use of brief mindfulness exercises has demonstrated improvements in student wellbeing across a range of disciplines. Whilst still recognizing the need for traditional and effective student support services, HEIs need to support and encourage students to develop the skills needed to manage some of the stressors of everyday student life.

This study trialed the use of brief mindfulness exercises as a method of self-care and self-regulation for students enrolled at King's College London and Monash University in Melbourne. Mindfulness exercises (six 1-2 minute audio files) were provided to students via existing virtual learning environments. We evaluated the impact of the intervention using pre- and post-intervention questionnaires (including validated measures and self-report data) and compared these with students from a wait-list control group.

This paper will describe preliminary results from the ongoing evaluation of the mindfulness intervention as trialed at King's College and Monash University, and discuss early findings regarding its impact and efficacy. We will also discuss some of the issues surrounding the implementation of, and recruitment to, internet-based interventions of this nature.

Keywords: mindfulness, stress, wellbeing, mental health

## 1 INTRODUCTION

### 1.1 Aims

The aim of the King's College London (KCL) & Monash University (MU) mindfulness for student wellbeing study is to explore the uptake and impact of brief mindfulness audio exercises, delivered via a virtual learning environment (VLE) to students enrolled in higher education courses in the UK and Australia.

### 1.2 Background

It has been acknowledged that students in higher education often experience high levels of stress and poor general wellbeing [1], [2]. However, few students actively seek support to prevent stress before it becomes unmanageable, or see how stress might impact their attainment. Not all students experiencing

study-related stress seek timely support to help manage this proactively [3], [4], which can contribute to students experiencing study-related burnout, avoidable distress, and in some cases, clinical anxiety or depression. The use of internet-delivered, self-directed wellbeing interventions has seen a radical increase over the past decade, and findings are on the whole very promising [5]–[7]. In particular, the use of brief mindfulness exercises has demonstrated overall improvements in student wellbeing across a range of disciplines [5], [8]–[10].

As higher education course content is increasingly being supported or delivered via VLEs such as Moodle [11], with some courses conducted entirely online, HEIs are challenged to adopt innovative ways of supporting students' wellbeing. From this, KCL and MU are committed to balancing a fundamental duty of care towards students with recognition of the fact that they are adult learning environments which value autonomy and independence of their students. Whilst providing high-quality and effective student support services, KCL and MU seek to support and encourage students to develop the skills needed to manage some of the stressors of everyday student life.

This study aims to trial the use of brief mindfulness exercises as a method of self-care and self-regulation for students at KCL and MU. Findings from existing research suggested ways in which this approach might be integrated with existing VLEs used at both universities. By providing brief, guided audio mindfulness exercises, embedded in the existing learning environment, we expected that students would be prompted and motivated to engage with and benefit from this self-directed support. We anticipate students will be empowered to take ownership of their stress management throughout the course of their studies.

This manuscript details preliminary findings from the KCL & MU mindfulness for student wellbeing study, exploring data from the first round of study modules – the project is ongoing at time of writing and due for completion in December 2019. By highlighting the importance of wellbeing and providing an effective tool to reduce feelings of stress and anxiousness, improvements in students' well-being and attainment are expected. We aim to evaluate this material across a selection of on-campus undergraduate and postgraduate courses, and for distance learning postgraduate students. This will inform developing student support at both KCL and MU.

## **2 METHODS**

### **2.1 Participants**

Participants in the study ( $N=196$ ) were students enrolled in higher education courses at either KCL ( $N=77$ ) or MU ( $N=119$ ). Over three quarters of the participants (77.6%) identified as female. Participants were recruited from a range of programmes at both KCL and MU, which included a combination of undergraduate and postgraduate, on campus and online (distance learning) delivery, from programmes in War Studies, Business Studies, Mental Health & Psychology, Public Health, Data Science, and Nursing. As an incentive to participate, all participants were offered the opportunity to win an Amazon voucher worth £20/AUD50, via a prize draw once the study concludes.

### **2.2 Procedure**

This study was approved by the King's College London Psychiatry, Nursing and Midwifery Research Ethics Subcommittee, and Monash University Human Research Ethics Committee.

Through informal discussions with academic staff at each institution, suitable programme modules were identified for inclusion in the study. A quasi-experimental design was used. For each programme included in the study, at least two modules were identified for inclusion<sup>1</sup>. One module was assigned to a control group, the other to the mindfulness group. Participants were made aware which group their module was a part of. Modules were selected where there was no overlap between students enrolled (i.e. students in a mindfulness module were not also undertaking a control module concurrently).

<sup>1</sup> With one exception – one programme at MU only had one module running, so this was assigned to the mindfulness group. This might explain why the mindfulness group was slightly larger than the control group.

# Student Wellbeing Study

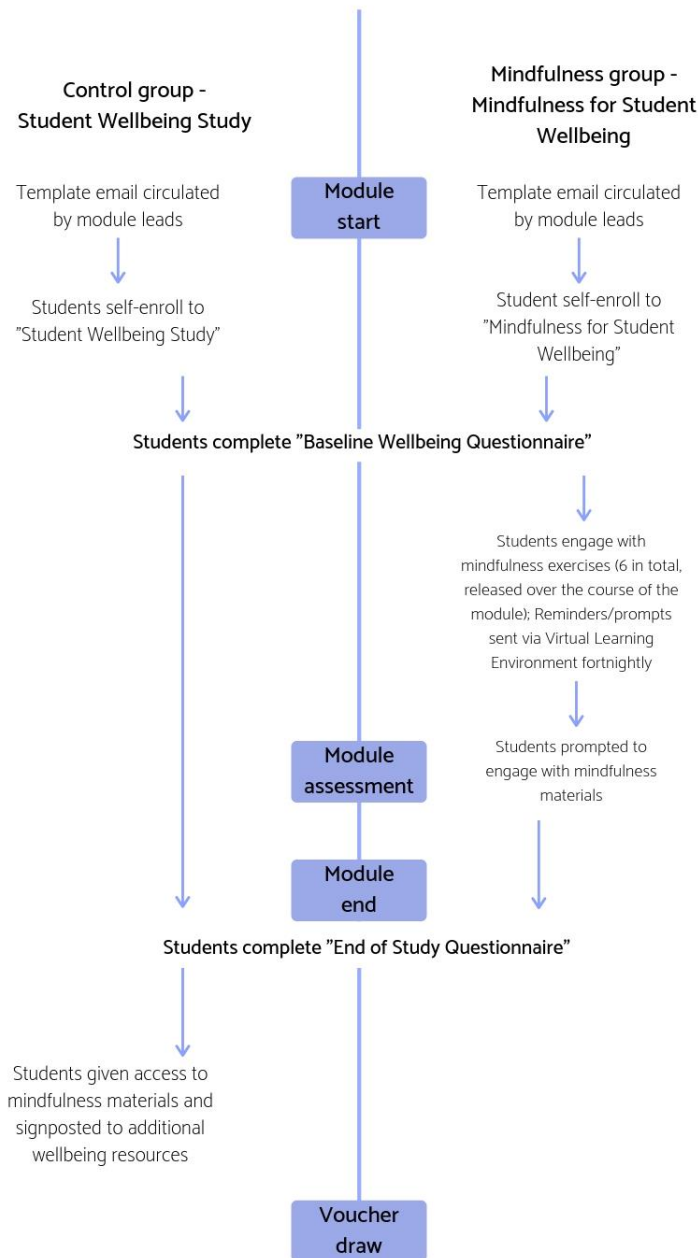


Figure 1. Study timeline and procedure

Participants were recruited to the study via a recruitment email sent from module leaders or senior teaching fellows, to all students enrolled on the candidate module. The email included details about the study and its aims, a link to the full information sheet, contact details for the researchers, and a URL link for students to self-enrol to the study. The study materials were delivered via dedicated module pages hosted on the university's existing VLE. To maximize participant engagement with the study, key dates were matched as closely to programme modules as possible (i.e. the study would conclude before the end of the academic semester).

Due to the study design, it was not possible to randomise allocation of participants to control of mindfulness groups. However, recruitment to either group was well-matched, with 59.7% of participants in the mindfulness group ( $N=117$ ).

### 2.2.1 Measures - baseline

Upon enrolment to the study module, all participants were again provided with a full information sheet and contact details for the researchers should they have any comments or questions. If they still wished to participate in the study, they were then asked to click through a tacit consent form to proceed to the baseline wellbeing questionnaire. This questionnaire asked students to self-generate a unique identifier (first three letters of mother's maiden name, first two digits of birthdate). This was to ensure that, whilst participant information was kept anonymous, baseline and follow-up questionnaire data could still be linked. Basic demographic information (gender, age group), their confidence on their current module, expected grade, and confidence in gaining this grade, was also collected. Participants in the mindfulness group were asked if they had ever meditated before. Finally, all participants were asked to complete three validated questionnaires: the Mindful Attention Awareness Scale (MAAS - 15 questions) [12], the Warwick-Edinburgh Mental Well-being Scale (WEMWBS – 14 questions) [13], and the Perceived Stress Scale (PSS – ten questions) [14].

### 2.2.2 Mindfulness intervention

Once this baseline questionnaire was completed, the control group had no other activities to complete until the end of the study period. The mindfulness group were asked to complete self-guided mindfulness exercises over the course of the study period. These mindfulness exercises were pre-recorded audio files, each 1-2 minutes in length, made available at set intervals over the course of the study (one every week or fortnight, depending on the length of the module from which participants were recruited). The exercises were hosted on the university's VLE, and participants could listen to the audio files there, download them to listen later, or read the transcripts, as many times as they wished.

### 2.2.3 Measures – follow-up

At the end of the study period, all participants were prompted to complete a follow-up questionnaire, using the same unique identifier they generated at baseline. This questionnaire again asked participants how confident they felt about the module, their expected grade, and how confident they were in achieving that grade. They were again asked to complete the MAAS, WEMWBS and PSS. Finally, participants in the mindfulness group were asked to rate on a scale of 1-10 how likely they would be to recommend mindfulness practice to their peers (Net Promoter Score or NPS [15]), and provide some free-text comments about their experience of the exercises, how useful they were, and how the intervention might be improved in future. Once the study period was complete, all of the mindfulness materials were made available to all participants across both groups.

## 3 RESULTS & DISCUSSION

### 3.1 Participant attrition

Of the 196 participants who enrolled on the study and completed the baseline questionnaire, only 69 (35.2%) completed the follow-up. Although participant drop-out was at similar levels in both mindfulness and control groups, considerably more participants at MU completed the follow-up questionnaire than participants at KCL (54.6% and 5.2% respectively). Due to the poor follow-up rate, a meaningful analysis of the data at this stage is challenging.

### 3.2 Overview – preliminary results

Descriptive statistics at this stage in the project reveal some general trends: mean scores for WEMWBS and MAAS in both mindfulness and control groups remained generally stable across the study period.

Mean PSS scores for the control group likewise remained relatively stable (17.89 (*sd*=7.22) at baseline, 18.54 (*sd*=7.96) at follow-up), but for the mindfulness group there was a general downward trend (20.40 (*sd*=6.10) at baseline, 16.98 (*sd*=6.20) at follow-up). This downward trend suggests participants in the mindfulness group perceived lower levels of stress after having engaged in the mindfulness exercises. Although this observation requires corroboration and should be taken with caution, it is a promising result at this early stage in the project.

At this stage in the project, the NPS is 9 – as NPS can range from –100 to 100, any score above 0 is considered “good”. However, this score is still relatively low, and suggests a need for improvement. Granted, NPS is limited by the number of participants who completed the follow-up questionnaire, but

comments and feedback from participants may provide insights for future improvements in the intervention and its delivery.

### **3.3 Participant feedback**

As part of the follow-up questionnaire, participants were invited to provide free-text comments, providing feedback on the intervention, the impact they felt it had on their studies, and how the intervention might be improved. Although some participants provided limited or no feedback in this section, the majority commented both on aspects of the intervention they enjoyed or found useful, or aspects that they did not enjoy or felt could be improved. One participant emailed the research at the end of the study period to provide further positive feedback and asking to be involved in further research that might see the intervention being expanded in future.

Based on rapid content analysis, three broad themes were developed to help us better understand participants' experiences of the mindfulness exercises, to inform future phases of the project.

#### *3.3.1 Supporting study through mindfulness*

Although the responses from participants were broad and mixed, many reported positive impacts the exercises had on their studies. Participants reported that the exercises were "a quick and easy way" to calm or ground themselves ("safe, secure, without the sky falling in"), provided a "moment of calm" and reminded them to "slow down and focus on the present". Participants also related these positive impacts back to their studies, explaining how they felt it aided concentration and clarity in their work.

Several participants mentioned lasting impacts the exercises had on their attitudes and behaviors. For example, one participant commented that now, when they feel "stressed and overwhelmed", they practice some of the techniques used in the exercises, such as focusing on breathing and bodily awareness ("these are things I had never done before doing the exercises").

However, some participants stated that they observed no significant impacts (positive or negative) from the exercises, with several commenting that the exercises were simply too short ("as I was just getting into them, they ended").

#### *3.3.2 Taking time*

Several participants commented that they found the exercises particularly useful to remind them to step back briefly from their studies. Students described the process as "a good opportunity to reset", "to take a moment out of the busyness of life" and "a break from thoughts".

However, two participants commented that they were "unable to find time" to engage in the intervention. Despite their interest in mindfulness (and reported that their inclusion as part of their course of study was "a good idea"), study and work demands meant that taking time for mindfulness was seen as an impossible extra demand. Given the number of participants who did not complete the follow-up questionnaire, it is possible that this experience was shared by others (that they could not find the time to engage with the exercises) but it is difficult to explore the extent of this in the absence of data.

Other participants commented on their busy schedules, with one stating they enjoyed how short the exercises were: "the length meant I could fit them into my busy schedule". However, several participants criticized the exercises as being too short - "useful but a bit short", "too short to change my mental state" and "they were over just as my mind had started to settle" were some of the comments given by participants.

#### *3.3.3 The format of the exercises*

While there were many positive comments from participants, there was also a breadth of constructive feedback. The most commonly occurring criticism of the intervention was that the exercises were too brief. One participant speculated that "the shorter they are the more likely people are to do them", but several participants suggested that longer exercises might have more positive benefits for them - "I think for them to be more beneficial they should have been at least 5 minutes". Given this mixed response to length of exercises, it might be worth considering offering a range to choose from, dependent on user preference and need. One participant suggested that the guided part of the exercise was the ideal length, but that the background music could perhaps extend beyond this to allow for "a consistent space to practice what the instructions offered". Another suggested "enable it to loop so can keep going for as long as you want".

As well as the length of the exercises, participants also comments on other aspects of the intervention's format. Although some participants specifically stated that they found the voice soothing, others did not ("rough and spoke a bit too fast"), and suggested offering options to choose from, dependent on preference.

## 4 CONCLUSIONS

The most significant challenge for this project so far has been recruiting participants and then encouraging them to complete all aspects of the study. Despite healthy recruitment at the start of the study, participant attrition was steep. With only a third of participants completing the follow-up questionnaire, results at this stage in the project are inconclusive. Clearly more data is needed, and this study is ongoing, to this end.

Particularly noteworthy are differences in recruitment and completion between KCL and MU – despite offering an almost identical intervention and similar methods of recruitment, KCL experienced lower initial engagement and a much higher rate of participant drop out. The reasons for this are currently unknown, and worthy of investigation. It is possible that significant contextual differences facilitated uptake and engagement at one institution, and not the other.

Participant feedback has been particularly useful in highlighting students' perceived, specific benefits of engaging in the intervention, as well as identifying areas for change and improvement. Although the majority of participants that completed the follow-up questionnaire gave positive feedback about their experiences, some had criticisms, and some stated they were unable to engage in the exercises due to competing demands on their time. As for the two-thirds of participants who dropped out before completing the study, their experiences are challenging to know, but unwise to ignore.

The KCL & MU mindfulness for student wellbeing study is ongoing at time of writing and due for completion in December 2019. In light of these preliminary findings, the research team will explore alternative means of encouraging recruitment and ongoing participant engagement. We also aim to undertake a more in-depth qualitative exploration of participants' experiences of the intervention, to try to better understand what might be barriers and facilitators to student engagement with wellbeing support.

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